Tolling Analysis Update

December, 2002

Introduction

- Major corridor projects exploring tolling
- RTID interested in tolling
- Corridor projects interact – e.g., diversion – necessitating systems analysis
  - WSDOT & King County contracted with Parsons Brinckerhoff Quade & Douglas, Inc.
- Three types of analysis:
  - Individual Corridor Projects
  - System Level: All lanes and total Corridor
  - RTID Projects

What we found out

- More analysis is needed including that necessary to accurately predict exact amounts of revenue generated
- Roles of RTID, Transportation Commission and Legislature regarding tolling need clarification
- Policy objectives for tolling need clarification

Pricing Methods

- **Economically Efficient Tolling**
  - Maximizes overall network travel benefits
  - Varies toll rates with levels of congestion to keep traffic flowing smoothly
  - Revenue potential is conservative
- **Revenue Maximizing Tolling**
  - Focuses on facility revenue rather than network performance
  - Greater levels of diversion behavior
  - Focus on willingness to pay
  - Difficult to estimate; subject to error

Example — SR-520 Bridge in 2014

- **Economically Efficient Tolls**
  - $16 to 28 M in 2014
  - $1.10 – 1.60 typical peak toll per direction
  - 45-50 mph average peak speed
  - 14% diversion rate
  - Off-peak discounting
  - 3+ HOVs toll-free
  - 15-hour toll period
  - Zero or reduced tolls on weekends

- **Revenue Maximizing Tolls**
  - $65 to 89 M in 2014*
  - $2.00 – 2.50 typical toll per direction
  - 55 mph average peak speed
  - >20 – 25% diversion
  - Peak surcharges possible; no off-peak discounting
  - HOVs pay toll
  - 24 hours / 7 days per week toll period

** Vollmer Associates, 1994*

Toll Revenue Estimates: Individual Projects

If Completed Corridor is Tolled Individually

- Alaskan Way Viaduct: $ 6 – 9.5 million per year (2014)
- SR 520: $18-31 million per year (2014)
- I-405 Corridor (HOT Lane Concept): $20 – 40 million per year (2014).

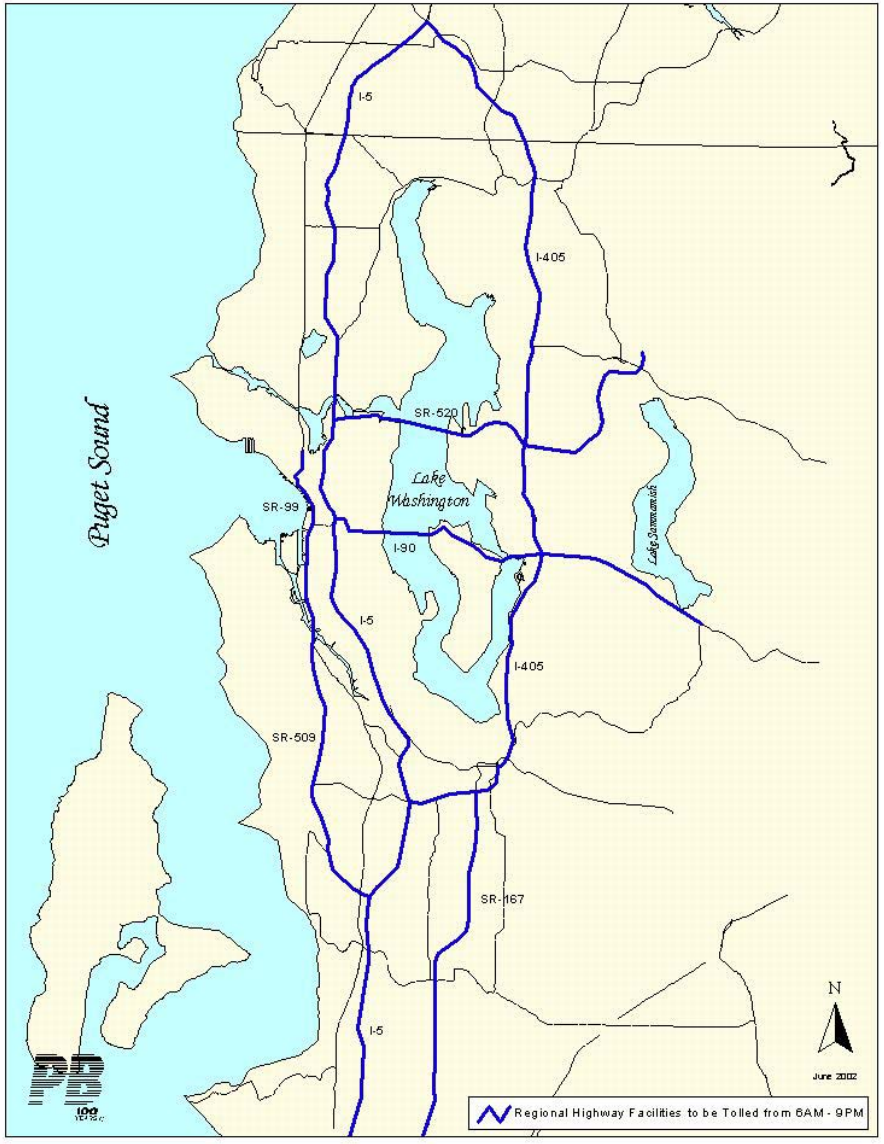
- ***Confidence level: very preliminary***
- ***Implementation issues: numerous***
- ***Traffic diversion & impacts***

Toll Revenue Estimates: Svstem

If corridors tolled as part of regional system

- Alaskan Way Viaduct: $9 - $17 million
- SR 520: $26 - $46 million
- I-405: $72 - $136 million
- System Total: $285 - $530 million

- ***Confidence level: very preliminary***
- ***Implementation issues: numerous.***
- ***Annual revenue in 2014 dollars***



RTID Projects

Toll Facility	*Extent of Tolling*	*Distance (miles)*	*Potential Application*	
I-405	SR-522 to I-5 in Tukwila	23.8	HOT Lanes	▪ HOT lanes formed from existing HOV and / or new lanes ▪ Non-HOVs pay toll in HOT lanes ▪ Other lanes remain toll-free
SR-167	I-405 to SR-18	12.0		
SR-520	Across Lake Washington	Bridge	General Tolling	▪ All existing or new general purpose lanes are tolled ▪ Existing or new HOV lanes remain toll-free with 3+ eligibility requirement ▪ For SR-99, only transit would be toll-free since no HOV lanes
SR-99 / AWV	Roy St. to Spokane St.	4.0		
SR-509	188th to I-5 @ SR-516	3.9		

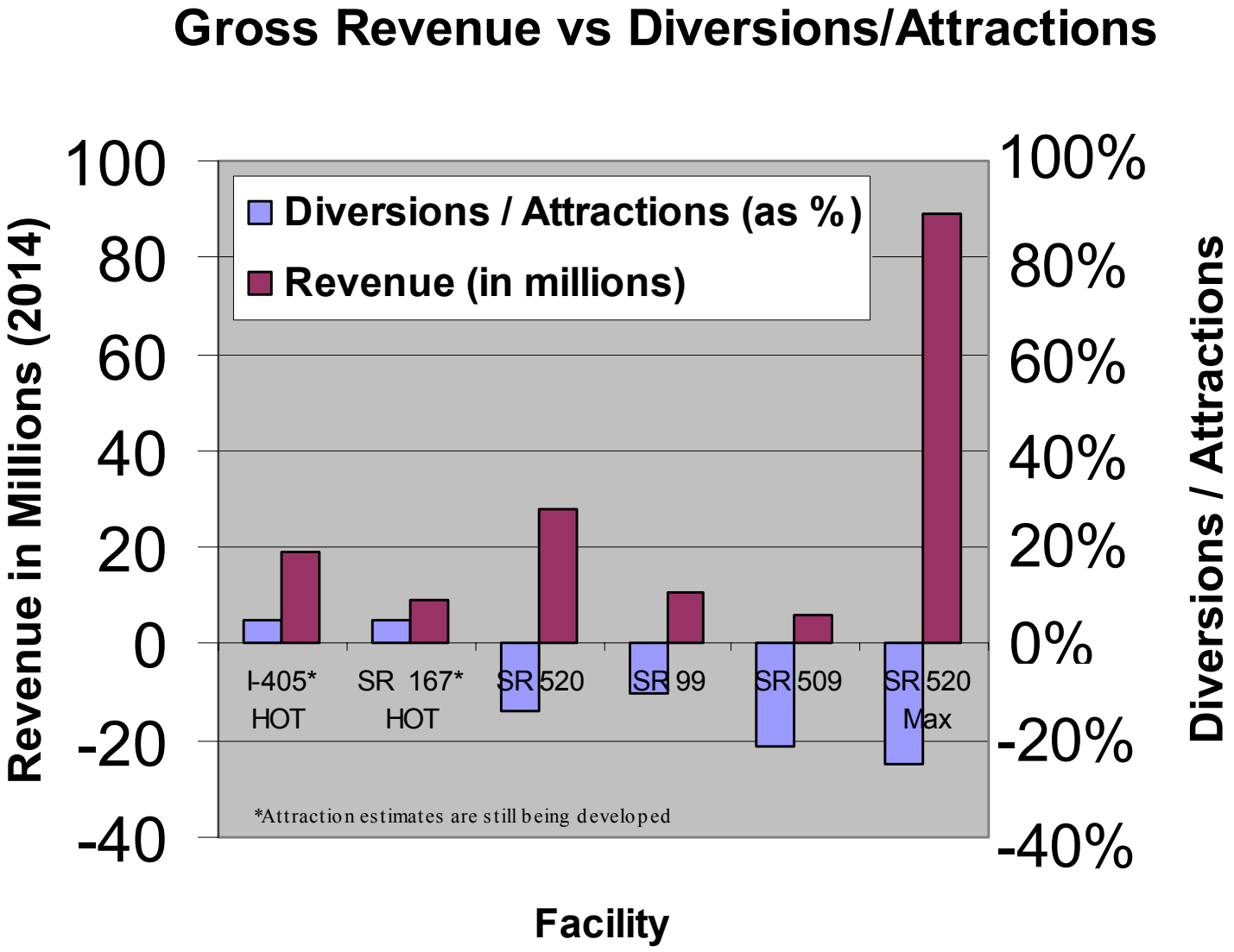
2014 Tolls — Leveraged Potential

Proposed Toll Facility	*Range of Net Toll Revenue Bond Proceeds**		
	Low Value of Time Weekends Toll-Free 2x Truck Toll Factor 10x Bond Proceeds		*Base Value of Time Weekend Tolling 3x Truck Toll Factor 14x Bond Proceeds*
I-405 HOT lanes	$80 M	to	$220 M
SR-167 HOT lanes	$40 M	to	$100 M
SR-520**	$220 M	to	$730 M
SR-99 / AWV	$50 M	to	$120 M
SR-509	$30 M	to	$70 M
2014 Totals	**$420 M**	**to**	**$1,240 M**

* **Gross toll revenues reduced by 5% for electronic toll collection errors/violation losses and by 20% for operations & maintenance**

** **SR-520 values adjusted upwards to reflect revenue maximizing operations; other facilities assume network optimizing "economically efficient" tolls.**

Revenues and Diversions



How will it work?
Example — SR-520 Redmond to Seattle
A Typical Commute

- Check Electronic Toll account balance & head east on SR-520
- Transponder is read by in-road gantry just before bridge
- Bridge toll is varied to keep traffic moving between I-5 & I-405
- Toll cost:
  - $1.10 (morning commute)
  - $1.60 (afternoon return trip)
- Travel time on SR-520 between I-405 & I-5 = 9 minutes

How Will it Work?
Example — I-405 Renton to Bellevue
A Typical Commute

- Check ETC account balance
- Enter I-405 heading north
- Merge across the free lanes to a HOT lane access point
- Transponder is recorded at various points en-route
- Speed is maintained at 60 mph, while the toll-free lanes are congested
- Toll cost:
  - $0.65 (morning commute)
    $1.14 (afternoon return trip)
- Travel time on I-405 HOT lane = 13 minutes